PROCEDURES FOR VERIFYING THE COMPRESSION STRENGTH OF SULFUR MORTAR CAPPING AASHTO T 106

A. PURPOSE

This method is intended to provide instruction for the verification of the compression strength of sulfur mortar capping compound used in ASTM Method C 109 or AASHTO T 106.

B. APPARATUS REQUIRED

1. Cube specimen mold as specified in ASTM C 109 or AASHTO T 106
2. Cover plate as specified in ASTM C 617, Figure 1 or AASHTO T 231, Figure 1
3. Calibrated thermometer readable to 1.0 °F or 1.0 °C
4. Ladle and melting pot capable of maintaining a temperature at 265 °F - 290 °F (129 ° - 143 °C)
5. Testing-achine with an accuracy of ± 1.0% and a range which includes the compressive strength to be checked in psi (5000 psi minimum)
6. Mineral Oil

C. PROCEDURE

1. Lightly coat inside of mold with mineral oil.
2. With calibrated thermometer, verify that temperature of capping compound is within specified limits and record.
3. Stir the mortar mixture to insure uniformity.
4. With mold and coverplate attached, quickly fill the three (3) compartments of the mold.
5. Allow approximately fifteen (15) minutes for shrinkage due to cooling and solidification and refill each compartment with molten material.
6. After solidification is complete carefully remove the cubes from the mold.
7. Store at room temperature for two (2) hours.
8. Test cubes in compression machine as described to AASHTO Test Method T 106.
9. Calculate compressive strength in psi.

D. TOLERANCE

All tolerances of molds and coverplates shall meet the specification required in the applicable ASTM or AASHTO Test Method as listed in apparatus required. The average compressive strength of the sulfur mortar mix shall be + 5000 psi (34 Mpa) minimum.

EQUIPMENT VERIFICATION RECORD

Verified By: _____ Date: _____

Equipment: Sulfur Mortar Capping Compound Location (Lab): _____

Identification No.: _____ Verification Frequency: 3 months

Previous Verification Date: _____ Next Due Date: _____

Verification Equipment Used: Molds, ID No.s: _____ Mineral Oil

Ladle Calibrated thermometer (readable to 1.0 ºF or ºC), SN: _____ Coverplate

Testing Machine, SN: _____ Melting Pot, SN: _____

Verification Procedure: (In-house) OMR-CVP-20 (PPC) / AASHTO T 231 Sec. 5

Temperature of Molten-Sulfur Mortar _____ (265-290 ºF or 129-143 ºC Req.)

PROCEDURE

Bring the temperature of the sulfur mortar to the range specified. Stir the mortar thoroughly to insure a uniform mixture. Using a cube specimen mold conforming to ASTM C 109 and a cover plate indicated in ASTM C 617, Figure 1, begin casting cubes. Using a ladle, quickly fill each of the three compartments all the way to the top of the cover plate filling hole. Allow sufficient time for maximum shrinkage, due to cooling, and solidification to occur (approx. 15 min.) and refill each hole with molten material. Remove the cubes from the mold carefully and store at room temperature for two hours. Perform the compressive strength test in accordance with ASTM C 109.

COMPRESSIVE STRENGTH _____

_____

_____

AVERAGE _____ (5000 PSI min.)